pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0021814**
Facility Type	**Municipal**	APS ID	**919458**
Major / Minor	**Major**	Authorization ID	**1144730**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Mansfield Borough Municipal Authority**	Facility Name	**Mansfield Municipal Authority STP**
Applicant Address	14 S Main Street	Facility Address	3 Corey Street
	Mansfield, PA 16933-1527		Mansfield, PA 16933
Applicant Contact	Christopher Mcgann	Facility Contact	Richard Correll
Applicant Phone	(570) 662-2315	Facility Phone	607-425-7527
Client ID	83075	Site ID	261669
Ch 94 Load Status	Not Overloaded	Municipality	Mansfield Borough
Connection Status	No Limitations	County	Tioga
Date Application Received	July 15, 2016	EPA Waived?	No
Date Application Accepted	July 18, 2016	If No, Reason	Major Facility, Significant CB Discharge
Purpose of Application	Renewal of existing NPDES permit		

Summary of Review

The above applicant has submitted an NPDES renewal application to continue to discharge from their existing Sewage Treatment Plant (STP). The STP serves portions of Richmond Township, Covington Township, and Putnam Township in and around Mansfield Borough in Tioga County, PA. The facility has 4 outfalls (Outfall 001, Outfall 101, Outfall 002, and Outfall 004). Outfall 001 is the main discharge with a design flow of 1.3 MGD. Outfalls 002 and 004 are Combined Sewer Overflows (CSOs). All outfalls discharge to the Tioga River, classified as a Cold Water Fishes (CWF) by the Department's Chapter 93 Regulations. There facility does not serve any industrial users.

The treatment plant is a Membrane Bioreactor (MBR) utilizing a 4 stage Bardenpho process consisting of grit removal, coarse screening, fine screening, chemical addition for phosphorus removal, pre-anoxic tanks (2), aeration tanks (2 tanks, plus 1 additional common tank), post anoxic tank (1), membrane units (4), and chlorine disinfection. Biosolids are held in a sludge holding tank until they are dewatered using the existing belt filter press.

Sludge use and disposal description and location(s): Northern Tier Landfill in Bradford County, PA.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		*Chad A. Fabian* Chad A. Fabian / Project Manager	March 31, 2021
X		*Nicholas W. Hartranft, P.E.* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	April 16, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001, 101, 002, 004	Design Flow (MGD)	1.3
Latitude	Outfalls 001 : 41º 48' 43.87" 101: 41º 48' 45" 002: 41º 48' 47" 004: 41º 48' 15"	Longitude	001:-77º 5' 7" 101: -77º 5' 5" 002: -77º 5' 8" 004: -77º 4' 53"
Quad Name	Mansfield	Quad Code	n/a
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tioga River (CWF)	Stream Code	30990
NHD Com ID	57351547	RMI	3.5 to Tioga Lake, 17 miles to PA/NY border
Drainage Area	179 miles^2 @ 001	Yield (cfs/mi²)	n/a
Q_{7-10} Flow (cfs)	11.9	Q_{7-10} Basis	Previous stream delineation
Elevation (ft)	1100	Slope (ft/ft)	n/a
Watershed No.	4-A	Chapter 93 Class.	CWF
Existing Use	CWF	Existing Use Qualifier	n/a
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, PH		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE		
TMDL Status	Final	Name	Tioga River
Nearest Downstream Public Water Supply Intake	The NY/PA border approximately		

Changes Since Last Permit Issuance: None

Combined Sewer Overflows

Combined Sewer Systems (CSSs) are wastewater collection systems designed to convey sanitary sewage and stormwater in a single pipe to a WWTP. During dry weather, the CSSs convey domestic, commercial and industrial wastewaters. In periods of rainfall or snowmelt, the total wastewater flow can exceed the design capacity of the CSS and/or treatment systems. When this occurs, the Combined Sewer Overflows (CSOs) are used to reduce the hydraulic impact to the CSS and WWTP. Because of varied contaminants and the volume of flows, CSOs can cause a variety of adverse impacts on the physical characteristics of surface water, impair the viability of aquatic habitats and pose a potential threat to drinking water supplies.

Since Mansfield operates a combined sewer system, additional requirements must be met through NPDES Permitting. Mansfield is subject to both state and federal Combined Sewer Overflow (CSO) strategies. Dischargers with combined sewer systems must characterize those systems, demonstrate implementation of the Nine Minimum Controls (NMCs) and develop a Long-Term Control Plan (LTCP).

A goal of the EPA CSO Control Policy are to ensure that if CSOs occur, they are only as a result of wet weather. Another goal of EPA is to bring all wet weather CSO discharge points into compliance with the technology-based and water quality-based requirements of the Clean Water Act (CWA) to minimize their impacts on water quality, aquatic biota and human health.

Since the Department is responsible for administering the federal NPDES permit program, the Department developed the PA CSO Policy to define how it will meet the requirements of the federal CSO policy. The goals of the state policy are to control and eliminate CSO discharges, as practicable, and to ultimately bring all remaining CSO discharges into compliance with state water quality standards through the NPDES permitting program.

The facility operates 3 CSO outfalls in conjunction with the US Army Corps of Engineers (ACE). Each CSO outfall is directed to an ACE pump station that was constructed as part of the 1980 Protective Levee Project in the Borough of Mansfield. None of the 3 existing CSOs are considered CSO related bypasses. CSO Outfalls 002 and 004 discharge when water withing the collection system exceeds the carrying capacity of the sewer lines. CSO 101 is diverted over a weir to ACE pump station #3 prior to the plant headworks when flows to the plant exceed 2.6 MGD. All three of the CSOs utilize a static screen for control of floatables.

Long Term Control Plan

The Long Term Control Plan (LTCP) is a document by which the permittee evaluates the existing CSS infrastructure and the hydraulic relationship between the CSS, wet weather, overflows and treatment capacity. Cost effective alternatives for reducing or eliminating overflows are evaluated and a plan forward to eventually meet water quality standards is selected. An implementation schedule is then developed to achieve that goal. The three LTCP options are demonstrative, presumptive and total separation. The demonstrative approach shows that the current plan is adequate to meet the water quality-based requirements of the CWA based on data, while the presumptive approach will implement a minimum level of treatment that is presumed to meet the water quality-based requirements of the CWA.

Mansfield's LTCP (attached) was last updated in October of 2016 at the request of the Department. The LTCP includes the required Nine Minimum Controls (NMCs). Currently, the LTCP does not include any milestones or compliance dates since the facility has met the presumptive approach utilizing the NMCs to eliminate or capture for treatment no less than 85% of the total volume of the combined sewage collected within the CSS during precipitation events (on an annual average basis). However, the LTCP will need to be revised to include a Post Construction Compliance Monitoring (PCCM) plan in accordance with EPA's PCCM Guidance. The compliance schedule will provide 3 years for the permittee to complete the PCCM plan and update the LTCP.

Annual CSO Status Report (Chapter 94 Report)

The Annual CSO Status Report is part of the permittee's annual Chapter 94 Municipal Wasteload Management Report. A summary of the most recent CSO events are as follows:

Year	Total CSO Capture %	Number of Events		
		CSO 101	CSO 002	CSO 004
2016	99.6	2	0	0
2017	95.3	13	1	1
2018	83.2	23	5	4
2019	90.4	23	1	1

The LTCP considers all recordable precipitation events when calculating the above CSO capture percentage. These values are recorded for each precipitation event.

Treatment Facility Summary

Treatment Facility Name: Mansfield Municipal Sewer Authority

WQM Permit No.	Issuance Date
1204401-A1	02/10/2006

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Membrane bioreactor (MBR)	Chlorine With Dechlorination	1.3

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.3	2550	Not Overloaded	Dewatering	Compost and landfill

Changes Since Last Permit Issuance: None

Compliance History Summary

Summary of eDMRs:	The facility utilizes the Department's eDMR reporting system. A summary of the past 12 months of eDMR data can be found in a table on the next page. The only effluent violation in the past year have been for two exceedances of phosphorus that occurred in August of 2020. A summary of these violations can be found in the "Compliance History" table found on page 6 below.
Summary of Inspections:	The most recent on-site inspection was performed on 1/22/2020. No violations were noted during the inspection.

Compliance History

DMR Data for Outfall 001 (from February 1, 2020 to January 31, 2021)

Parameter	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20
Flow (MGD) Average Monthly	0.5974	0.5350	0.4470	0.3610	0.3197	0.3347	0.351	0.3403	0.5680	0.5916	0.5520	0.7088
Flow (MGD) Daily Maximum	1.0641	1.8997	1.1233	0.8565	0.4383	0.50645	0.5761	0.4191	1.7020	1.2514	0.8495	1.0437
pH (S.U.) Minimum	7.16	7.16	7.3	7.25	7.14	7.36	6.93	7.11	6.83	6.83	6.76	6.79
pH (S.U.) Maximum	7.58	7.57	7.6	7.56	7.45	7.57	7.66	7.52	7.41	7.22	7.30	7.21
TRC (mg/L) Average Monthly	0.06	0.25	0.35	0.22	0.09	0.26	0.28	0.15	0.18	0.07	0.22	0.23
TRC (mg/L) Instantaneous Maximum	0.39	0.85	0.82	0.72	0.33	0.49	0.51	0.77	0.77	0.44	0.52	0.49
CBOD5 (lbs/day) Average Monthly	< 10.36	< 9.4	< 7.91	< 7.45	< 5.92	6.72	< 6.68	< 6.78	< 9.09	< 10.98	< 9.76	13.79
CBOD5 (lbs/day) Weekly Average	< 13.60	< 14.06	< 9.51	< 11.63	< 6.96	7.64	< 7.74	< 7.87	< 11.12	< 18.43	< 10.40	17.94
CBOD5 (mg/L) Average Monthly	< 2.2	< 2.1	< 2.23	< 2.18	< 2.1	< 2.2	< 2.2	< 2.34	< 2.18	< 2.13	< 2.17	< 2.11
CBOD5 (mg/L) Weekly Average	< 2.2	< 2.1	< 2.4	< 2.2	< 2.2	< 2.2	< 2.7	< 2.6	< 2.2	< 2.2	< 2.2	< 2.2
TSS (lbs/day) Average Monthly	< 21.0	< 17.5	< 14.2	< 13.7	< 11.3	< 12.3	< 12.1	< 11.6	< 16.6	< 20.6	< 18	30.1
TSS (lbs/day) Weekly Average	< 24.7	< 25.6	< 17.3	< 21.1	< 12.7	< 13.9	< 14.3	< 12.0	< 20.7	< 34.5	< 18.9	36.5
TSS (mg/L) Average Monthly	< 4.5	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4.75
TSS (mg/L) Weekly Average	< 6	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 7
Fecal Coliform (CFU/100 ml) Geometric Mean	< 4.45	< 2.5	< 1.09	< 4.0	< 7.3	< 1.3	< 1.7	< 3.7	< 2.1	< 5.36	< 1.26	3.20
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	21.6	< 16.1	2	45.9	< 261.3	9.7	39.9	18.7	6.3	8.5	2	73.3

Nitrate-Nitrite (mg/L) Average Monthly	6.6	6.5	3.6	2.9	2.82	1.6	2.74	2.42	5.4	4.54	2.6	1.45
Nitrate-Nitrite (lbs) Total Monthly	1024.1	777.1	361.2	282.7	247.7	145.9	273.9	206.8	735.4	665.2	374.6	274.1
Total Nitrogen (mg/L) Average Monthly	< 8.5	< 7.7	< 7.7	< 4	< 4.04	< 2.63	< 4.54	< 3.42	< 6.6	< 5.56	< 3.8	< 2.75
Total Nitrogen (lbs) Effluent Net Total Monthly	< 1326.1	< 917.9	< 740.6	< 381.4	< 354.4	< 241.4	< 470.2	< 293	896.6	< 810	< 549.7	< 494.3
Total Nitrogen (lbs) Total Monthly	< 1326.1	< 917.9	740.6	< 381.4	< 354.4	< 241.4	< 470.2	< 293	< 896.6	< 810	< 549.7	< 494.3
Total Nitrogen (lbs) Effluent Net Total Annual					< 8861							
Total Nitrogen (lbs) Total Annual					< 5922							
Ammonia (mg/L) Average Monthly	< 0.33	< 0.1	< 0.1	< 0.11	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 51.1	< 12.6	< 9.9	< 10.2	< 9.6	< 9.3	< 9.3	< 8.6	< 13.4	< 14.2	< 14.4	< 17.4
Ammonia (lbs) Total Annual					< 355							
TKN (mg/L) Average Monthly	< 2	< 1.1	< 4.1	< 1	< 1.2	< 1	< 1.8	< 1	< 1.2	< 1	< 1.2	< 1.3
TKN (lbs) Total Monthly	< 302	< 140.8	< 379.4	< 98.7	< 106.7	< 95.4	< 196.3	< 86.2	< 161.2	< 144.8	< 175.1	< 220.2
Total Phosphorus (lbs/day) Average Monthly	2.77	5.08	3.66	5.42	5.70	6.64	5.89	4.75	3.94	4.13	1.37	0.67
Total Phosphorus (lbs/day) Weekly Average	3.15	14.27	4.31	6.94	6.74	8.76	7.24	6.37	5.39	4.39	2.26	0.92
Total Phosphorus (mg/L) Average Monthly	0.609	1.038	1.062	1.68	2.0	2.3	2.0	1.652	0.996	0.884	0.301	0.106
Total Phosphorus (mg/L) Weekly Average	0.78	2.1	1.44	1.81	2.35	3.1	2.4	2.3	1.55	1.1	0.545	0.125
Total Phosphorus (lbs) Effluent Net Total Monthly	85.7	157.6	110	171.5	171.1	205.4	182.7	142.5	122.3	123.8	42.4	19.3
Total Phosphorus (lbs) Total Monthly	85.7	157.6	110	171.5	171.1	205.4	182.7	142.5	122.3	123.8	42.4	19.3

Total Phosphorus (lbs) Effluent Net Total Annual					1219							
Total Phosphorus (lbs) Total Annual					1079							

Compliance History

Effluent Violations for Outfall 001, from: March 1, 2020 To: January 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Phosphorus	08/31/20	Avg Mo	2.3	mg/L	2.0	mg/L
Total Phosphorus	08/31/20	Wkly Avg	3.1	mg/L	3.0	mg/L

N **Development of Effluent Limitations**

Mansfield Municipal Authority STP

Outfall No.	001	**Design Flow (MGD)**	1.3
Latitude	41º 48' 43.80"	**Longitude**	-77º 5' 5.50"

Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

To establish whether water-quality based effluent limitations (WQBELs) are required, the Department models in-stream conditions. The WQM7.0 model allows the Department to evaluate point source discharges of dissolved oxygen (DO), carbonaceous BOD (CBOD5), and ammonia-nitrogen (NH3-N) into free-flowing streams and rivers. To accomplish this, the model simulates two basic processes: the mixing and degradation of NH3-N in the stream and the mixing and consumption of DO in the stream due to the degradation of CBOD5 and NH3-N.

The above described modeling was not previously performed as the Department considered the Tioga River to meet the water quality criteria exception of 25 PA Code §95.5. WQM7.0 modeling (see attached) was performed during the review of this renewal application. The modeling showed that the existing limitations for CBOD5 and DO are protective of water quality standards. The model recommended establishing an effluent limit for ammonia during the summer months and monitoring during the winter months, per the Department's SOP for establishing effluent limitations for individual sewage dischargers (SOP No. BCW-PMT-033).

To evaluate the toxic parameters (Pollutant Groups 1-5 in the renewal application) the Department's Toxic Management Spreadsheet (TMS, version 1.3) was used. The TMS evaluates each parameter by performing a "Reasonable Potential Analysis" (RPA) and PENTOXSD modeling on the maximum value reported within the application or the DMRs. The PENTOXSD model is a single discharge mass-balance water quality analysis model that includes consideration for mixing and other factors to determine recommended water quality-based effluent limits. The model incorporates the water quality criteria in 25 PA Code §93. The modeling results are provided in the TMS (see attached).

The results on page 14 of the respective TMS show that monitoring will be required for the following parameters total copper, total zinc, 2,4 Dinitrophenol, and total cadmium. The results also show new effluent limitations will be established for the following parameters: Hexachlorobutadiene, 1, 2, 4-Trichlorobenzene, Dibenzo(a,h)Anthrancene. The newly proposed effluent limitations and monitoring frequencies can be seen in the proposed effluent limits table (see footnotes) below and on page 14 of the TMS model results.

Sampling was not performed for the following parameters: fluoride, acrolein, acrylamide, acrylonitrile, 1,4-dioxane, methyl bromide, 1,1,2,2-Tetrachlorethane, 4,6-Dinitro-o-Cresol, and 2,6 Dinitrotoulene. Fluoride does not have water quality criteria. It is a parameter of interest near Public Water Supplies (PWS). Since there is no PWS in the vicinity of the discharge, fluoride monitoring is not essential. The other 8 parameters that were not sampled can assume to be not present, based on the Non-Detect (ND) results of all the other pollutants in the same pollutant

groups that were sampled. Additionally, since there are no industrial users within the system, the presence of these pollutants is not expected.

Emerging Pollutants (TDS, Sulfate, Chloride, Bromide, 1,4-Dioxane)

In accordance with 25 PA Code §95.10, no treatment is required for TDS since the existing load was approved prior to 8/21/2010. However, under the authority of §92a.61 based on a decision between the Environmental Quality Board and EPA, the Department has begun increased monitoring for the emerging pollutants of TDS, Sulfate, Chloride, Bromide and 1,4-Dioxane.

The Department's SOP for Establishing Effluent Limitations for Individual Sewage Permits (SOP No. BCW-PMT-033) states that discharges where the TDS concentration exceeds 1,000 mg/l or the loading exceeds 20,000 lbs/day and the flow exceeds 0.1 MGD, the permit should include monitoring for TDS, Sulfate, Chloride and Bromide. The application sampling showed the maximum TDS concentration in Outfall 001 to be 366 mg/l (or approximately 3968 lbs/day at 1.3 MGD flows). Therefore, since the TDS threshold has not been exceeded, no monitoring for the above emerging pollutants is required.

Best Professional Judgment (BPJ) Limitations

Based on BPJ, monitoring for total copper, total zinc, 2,4 Dinitrophenol, and total cadmium will be established at 1/quarter. This will provide the Department at least 60 sample results for each parameter to re-evaluate the parameters during the next NPDES renewal cycle.

Hauled-in Waste

The facility accepts approximately 2000 gallons of hauled in septage per year. No hauled in wastes were accepted in 2019.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this draft permit does not propose to relax any existing effluent limitation.

Phosphorus Limitations

Since the discharge is upstream of Tioga Lake, the Department previously evaluated phosphorus limitations in accordance with the Department's guidance titled "Evaluations of Phosphorus Discharges to Lakes, Ponds, and Impoundments" (Document Number 391-3200-013. The evaluation included modeling utilizing the Department's LAKE model. A copy of the model is attached. Since there are no changes to the water body or the discharge characteristics, per the Department's SOP for reissuance of NPDES Permits, no further modeling is required.

TMDL

The Tioga River has an Total Maximum Daily Load (TMDL) that was approved on March 1, 2003. The TMDL is for aquatic impairment of metals (aluminum, manganese, and iron) from sources of Acid Mine Drainage (AMD). The discharge from the MMA STP is not expected to be a contributing factor to the impairment. To verify this, the Department will require sampling of the respective metals at a frequency of 1/year.

Whole Effluent Toxicity (WET)

No WET testing was required to be performed at the time of the application was submitted since the Department previously considered the segment of the Tioga River to met the water quality exception criteria of 25 PA Code §95.5 due to lack of support for fish or aquatic life. The Department no longer considers this section of the Tioga River to meet the criteria of 25 PA Code §95.5. Therefore, WET testing will be required by the draft permit. The draft permit will propose 1/quarter WET testing in the first year of the permit to determine if any reasonable potential exists.

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.881** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(1.3 MGD x 1.547) / ((11.9 cfs x 0.881) + (1.3 MGD x 1.547))] x 100 = **16%**

Is IWCa < 1%? ☐ **YES** ☒ **NO (YES - Acute Tests Required OR NO - Chronic Tests Required)**

Type of Test for Permit Renewal: **Chronic**

2. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(1.3 MGD x 1.547) / ((11.9 cfs x 1) + (1.3 MGD x 1.547))] x 100 = **14.45%**

3. Determine Dilution Series

Per the Department's WET SOP, the dilution series (based on the above TIWCc) that will be proposed in the draft permit will be as follows:

Dilution Series = 100%, 57%, 14%, 7%, and 4%.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissovled Oxygen (DO)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	270	430	XXX	25	40	50	2/week	24-Hr Composite
TSS	320	485	XXX	30	45	60	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs) Effluent Net	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia (NH_3-N)(1) (May-September)	162	271	XXX	15.0	25.0	25.0	2/week	24-Hr Composite
Ammonia (NH_3-N) (October-April)	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	21	32	XXX	2.0	3.0	4	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs) Effluent Net	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Cadmium(2)	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Copper	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Zinc	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	24-Hr Composite
2,4-Dinitrophenol (2)	Report Avg Qrtly	Report Daily Max	XXX	Report Avg Qrtly	Report Daily Max	XXX	1/quarter	24-Hr Composite
Dibenzo(a,h)Anthrancene (µg/l) (1)(2)	0.00004	.00006	XXX	0.003	0.005	0.008	1/week	24-Hr Composite
Hexachlorobutadiene(µg/l) (1)(2)	0.004	0.006	XXX	0.33	0.52	0.83	1/week	24-Hr Composite
1, 2, 4-Trichlorobenzene(µg/l)(1)(2)	0.005	0.08	XXX	0.48	0.76	1.21	1/week	24-Hr Composite
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Iron	Report Annual Avg	XXX	XXX	Report Annual Avg	XXX	XXX	1/year	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Aluminum	Report Annual Avg	XXX	XXX	Report Annual Avg	XXX	XXX	1/year	24-Hr Composite
Total Manganese	Report Annual Avg	XXX	XXX	Report Annual Avg	XXX	XXX	1/year	24-Hr Composite

Footnotes:

1) This is a newly proposed effluent limitation based on the results of the Department's Toxics Management Spreadsheet (TMS) or the Department's WQM7.0 Model (Version 1.1).

2) Parameter was not sampled to the Department's Target Quantitation Limit (TQL). If the parameter is re-tested to the TQL during the draft permit comment period and shown to be non-detect, the parameter can be assumed to be not present and the limitation and/or monitoring requirement will be removed.

General Information

The associated mass-based limits (lbs/day) for all parameters were based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34). All effluent limits were then rounded down in accordance with the rounding rules established in the *Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001)*, Chapter 5 - Specifying Effluent Limitations in NPDES Permits. The existing monitoring frequencies and sample types for these parameters generally correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3 and will remain.

Flow

Reporting of the average monthly and daily maximum flow is consistent with monitoring requirements for other treatment plants of this size.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

The results of the previous model WQM 7.0 model show the above proposed limits are protective of water quality standards in the Department's Chapter 93 Regulations.

Total Suspended Solids (TSS)

The previously applied technology based secondary treatment standards (25 PA Code §92a.47 (a) (1&2)) for TSS still apply.

pH

CFR Title 40 §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH.

Fecal Coliforms

The existing and proposed fecal coliform limits are as specified in 25 PA Code § 92a.47 (a)(4)&(5).

Influent BOD_5 and TSS

The existing permit does not require influent raw sewage monitoring for BOD5 and TSS. This draft permit proposes to monitoring the raw sewage influent for these parameters. The Department requires the reporting of raw sewage influent monitoring for BOD5 and TSS in all POTW permits. This provides the

Department with the ability to monitor the percent removal of each parameter as stipulated in [illegible] conditions and maintain records of the BOD_5 loading as required by 25 Pa. Code Chapter 94. The monitoring frequencies and sample types are identical to the effluent sampling.

Dissolved Oxygen (DO)

Given results of the WQM 7.0 model, a discharge of effluent from this facility with a DO concentration of 3 mg/l would not result in an exceedance of water quality requirements for this stream. It is anticipated, based on similar cascade discharge technology used at the facility, that the DO concentration in the effluent would be greater than 6.0 mg/l. Therefore, based on BPJ, only monitoring will be required for this facility. This will also provide historical data to establish baseline DO levels in the effluent for future reviews

E. Coli

Monitor and report for E. Coli has been added per 25 PA Code § 92a.61 and the Department's SOP for reissuance of NPDES permits.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs) Effluent Net	XXX	23744 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	3166 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: 001

Proposed Part C Conditions

-WET Testing (Quarterly during first year)
-CSO conditions with compliance schedule for PCCM plan